REMARKS

This communication is responsive to the Office Action mailed 3 January 2007 as extended pursuant to 37 CFR 1.136(a) by payment of the accompanying fees.

In this paper, the Applicant has:

- cancelled claims 1, 13-23, 29-36 and 42-46;
- amended claims 2, 6, 10, 24, 27, 28, 37 and 41; and
- added new claims 47-63.

The amendments to claims 2, 6, 10, 24, 27, 28, 37 and 41 and new claims 47-63 are submitted to be completely supported by the application as originally filed and to add no new matter.

Claims 2-12, 24-28, 37-41 and 47-63 are currently pending.

Formal Objections

The Examiner has raised a number of formal objections to the previously pending claims on the basis of the phrase "capable of holding" as found in previously pending claims 28, 37 and 41. The Applicant has amended claims 28, 37 and 41 to address these objections. The remaining claims to which the Examiner has raised formal objections have been cancelled.

The Applicant submits that the amendments to claims 28, 37 and 41 together with the claim cancellations obviate the formal objections raised by the Examiner.

New Claims 47-63

The Examiner has raised US Patent No. 6,654,376 (Stacey et al.) in relation to the previously pending claims. The Applicant submits that new claims 47-63 patentably distinguish Stacey et al.

As understood by the Applicant, Stacey et al. disclose a packet scheduling system that controls the dispatch of packets containing constant bit rate (CBR) or real time variable bit rate (rt-VBR) at an ingress operation, where the packets are multiplexed into payloads of an asynchronous transfer mode (ATM) bearer virtual circuit connection (VCC). Packets can be queued in a number of queues according to priority. The scheduling system controls assembly

of common part sublayer payload data units (CPS-PDU) comprising any unused octets from a previous packet partially dispatched and whole packets in order of priority. If a holdover timer period expires before a CPS-PDU is completed, the payload of that data unit is packed with null data and dispatched. The packet dispatch is controlled to match the traffic characteristics of the underlying bearer VCC channel.

As described at col. 14, ln. 37-42, when a packet is received by the Stacey et al. scheduling system for a new VCC channel, the Stacey et al. scheduling system sets a new Holdover Timer by raising a flag to the Timer En-Queuing Process (46) which identifies the VCC and the event type. This aspect of Stacey et al. entails that the Stacey et al. system uses one Holdover Timer for each VCC. This aspect of Stacey et al. is reiterated at col. 7, ln. 20-22 which explains how the holdover timer is used on a "per VCC basis" and is "reset at the start of each payload assembly process" and at col. 11, ln. 23-25 which describes how the embodiment provides "one instance of an AAL2 packet scheduler per AAL2 bearer VCC".

Stacey et al. describe a "timer expiry process" (49) - see Figure 4. In the Applicant's view, a "process" or "processor" refers to a control entity - i.e. a control entity that controls the Holdover Timers for the various VCCs. Stacey et al. also describe the use of a set of "Event Timer ring buffers" (48) in conjunction with an "Event Store" (47). At col. 14, ln. 47-49, Stacey et al. disclose that the events in Event Store (47) are "either the expiry of a Tmin Timer or the expiry of a Holdover Timer, determined by the timer expiry process 49." At col. 14, ln. 65-67, Stacey et al. disclose that "there are two events per VCC (Tmin Expiry and Holdover Expiry) the Event Store consists of 2xnumber of AAL2 VCCs." These passages from Stacey et al. clearly disclose that the Stacey et al. system actually incorporates two timers per VCC channel – i.e. a Holdover Timer and a Tmin Timer.

In contrast to Stacey et al., new independent claim 47 recites "whenever a partially filled packet is created for an outgoing channel: a) scheduling an expiry time for the outgoing channel; b) setting a reference for identifying the outgoing channel; and c) storing the reference in a list, the list comprising a plurality of references, each reference identifying a corresponding outgoing channel for which a corresponding partially filled packet is scheduled to have the expiry time". This passage from claim 47 recites that the list includes a plurality of references wherein each reference identifies a "corresponding outgoing channel" and that all of the corresponding outgoing channels in the list are scheduled to have a single "expiry time". This aspect of claim 47 differs from the Stacey et al. system which uses a Tmin Timer and a

Holdover Timer for each VCC channel and not one timer for multiple outgoing VCC channels. Also, the cited passage from claim 47 recites a list populated by references wherein the references point to multiple channels that have the same expiry time. Stacey et al. do not appear to disclose a list having this feature. At col. 14, ln. 28, Stacey et al. describe the use of linked lists wherein there is "one linked list per priority bearer VCC" – i.e. the Stacey et al. system uses one linked list per channel.

Claim 47 also recites "consulting the list at preset time intervals and transmitting any partially filled packets scheduled for the expiry time at the expiry time". The Stacey et al. system can not perform this operation, since it does not have a "list" having the features of the claim 47 "list". Furthermore, this aspect of claim 47 recites that any partially filled packets which share a common expiry time are transmitted at the same expiry time. In contrast, the Stacey et al. system transmits each packet at a Holdover Timer time that is particular to that packet.

Based on this reasoning, the Applicant submits that claim 47 patentably distinguishes Stacey et al. Claims 48-55 depend from claim 47 and are submitted to patentably distinguish Stacey et al. for at least this reason.

New independent claim 56 recites "a data structure for storing, for each respective expiry time, a list of a plurality of references wherein each of the plurality of references identifies a corresponding outgoing channel with a corresponding partially filled packet that has the respective expiry time". This passage from claim 56 recites a list containing a plurality references to a corresponding plurality of outgoing channels, all of which are assigned a single "expiry time". As discussed above, Stacey et al. do not appear to disclose such a list. The Stacey et al. system uses a Tmin Timer and a Holdover Timer for each VCC channel and not one timer for multiple outgoing VCC channels. Furthermore, Stacey et al. specifically state that each list used in accordance with the Stacey et al. system has a single corresponding channel – see col. 14, ln. 28, where Stacey et al. describe the use of "one linked list per priority bearer VCC". In contrast with this aspect of Stacey et al., the above cited passage of claim 56 recites a list containing references to multiple outgoing channels (VCCs).

Claim 56 also recites "first logic means for identifying, in the data structure for each time increment, a list having an expiry time equal to the current time and generating a send now signal indicating that any partially filled packet having the expiry time must be transmitted

without further delay". The Stacey et al. system can not have this claim 56 logic means, as the Stacey et al. system does not have a "list" having the features of the claim 56 "list". Furthermore, this aspect of claim 56 recites a send now signal indicating that any partially filled packets which share a common expiry time are transmitted without further delay. In contrast, the Stacey et al. system transmits each packet at a Holdover Timer time that is particular to that packet.

Based on this reasoning, the Applicant submits that claim 56 patentably distinguishes Stacey et al. Claims 57-63 depend from claim 56 and are submitted to patentably distinguish Stacey et al. for at least this reason.

Claims 2-12

The Examiner has raised Stacey et al. in connection with claims 2-12. The Applicant submits that claims 2-12 patentably distinguish Stacey et al.

In contrast to Stacey et al., claim 2 recites "if there is no accumulated data for an outgoing channel then upon the receipt of data for that outgoing channel which is not dispatched immediately, scheduling an expiry time for the outgoing channel and associating the outgoing channel with the expiry time; and, when the expiry time occurs, using the association to identify a group of a plurality of outgoing channels associated with the expiry time and, for the outgoing channels in the group, sending the accumulated data". This passage from claim 2 recites that multiple channels (i.e. "a plurality of outgoing channels") are assigned a single "expiry time". This aspect of claim 2 differs from the Stacey et al. system which uses a Tmin Timer and a Holdover Timer for each VCC channel and not one timer for multiple outgoing VCC channels. Furthermore, this aspect of claim 2 includes an "association" between a single "expiry time" and a corresponding "plurality of outgoing channels" which differs from Stacey et al. Stacey et al. specifically state that each list has a single corresponding channel – see col. 14, ln. 28, where Stacey et al. describe the use of "one linked list per priority bearer VCC".

Based on this reasoning, the Applicant submits that claim 2 patentably distinguishes Stacey et al. Claims 3-12 depend from claim 2 and are submitted to patentably distinguish Stacey et al. for at least this reason.

Claim 4 depends from claim 2 and recites "upon dispatching the accumulated data for an outgoing channel before the expiry time, deleting from the list the association of the

outgoing channel with the expiry time". Stacey et al. do not appear to describe anything like this feature of claim 4. More specifically, Stacey et al. do not appear to disclose deleting an entry comprising an association between a channel and an expiry time from a list as recited in claim 4. It would be impossible to perform this function using the Stacey et al. system, where each list corresponds to a single VCC channel. Based on this reasoning, the Applicant submits that claim 4 further patentably distinguishes Stacey et al.

Claim 5 depends from claim 4 and recites that "deleting from the list the association of the outgoing channel with the expiry time comprises retrieving information identifying a previous outgoing channel in the doubly linked list and a next outgoing channel in the doubly linked list from a record associated with the outgoing channel". As discussed above in relation to claim 4, Stacey et al. do not appear to disclose deleting associations of outgoing channels with expiry times from a list. Stacey et al. also fail to disclose the particulars of deleting these associations as recited in claim 5. Based on this reasoning, the Applicant submits that claim 5 further patentably distinguishes Stacey et al.

Claims 24-28

The Examiner has raised Stacey et al. in connection with claims 24-28. The Applicant submits that claims 24-28 patentably distinguish Stacey et al.

In contrast to Stacey et al., claim 24 recites "when the expiry time occurs, using the association to identify a group of a plurality of connections for which there are partially-filled cells all associated with the expiry time and dispatching the partially-filled cells in the group". This claim 24 feature clearly recites that the use of associations between a "plurality of connections" and a single "expiry time". The Stacey et al. system differs from this claim 24 feature in that the Stacey et al. system uses multiple timers (i.e. a Tmin Timer and a Holdover Timer) for each VCC channel. Furthermore this aspect of claim 24 includes an "association" between a single "expiry time" and a corresponding "plurality of connections" which differs from Stacey et al. Stacey et al. specifically state that each list has a single corresponding channel – see col. 14, ln. 28, where Stacey et al. describe the use of "one linked list per priority bearer VCC".

Claim 24 also recites "providing, in a CU timer memory, areas corresponding to each of a plurality of possible expiry times and wherein associating the connection with the expiry

time comprises placing information identifying the connection into an area in the CU timer memory corresponding to the expiry time." Stacey et al. teach directly aware from this claim 24 feature at col. 7, ln. 8-15 where it is stated that the Stacey et al. invention relates to multiplexing minicells into cells to be transmitted on a VCC for supporting more than one user/VCC. This has no relevance at all to a CU timer. Furthermore, Stacey et al. do not appear to disclose a CU timer memory which is used to store information in the manner recited in claim 24.

Based on this reasoning, the Applicant submits that claim 24 patentably distinguishes Stacey et al. Claims 25-28 depend from claim 24 and are submitted to patentably distinguish Stacey et al. for at least this reason.

Claims 37-41

The Examiner has raised Stacey et al. in connection with claims 37-41. The Applicant submits that claims 37-41 patentably distinguish Stacey et al.

In contrast to Stacey et al., claim 37 recites "a data structure for holding information identifying groups of partially-filled packets, each group of partially-filled packets identifying a corresponding plurality of partially-filled packets which share a common expiry time and comparison logic connected to signal to the outgoing packet assembler when the common expiry time for a group of partially-filled packets has occurred". This passage from claim 37 recites a data structure wherein multiple partially-filled packets (i.e. "a corresponding plurality of partially-filled packets") share a single common"expiry time". As discussed above, this aspect of claim 37 differs from the Stacey et al. system which uses multiple timers (i.e. a Tmin Timer and a Holdover Timer) for each partially-completed packet and not one timer for multiple partially-completed packets.

Stacey et al. teach directly aware from claim 37 at col. 7, ln. 8-15 where it is stated that the Stacey et al. invention relates to multiplexing minicells into cells to be transmitted on a VCC for supporting more than one user/VCC. This has no relevance at all to a combined use (CU) timer as recited in claim 37. Furthermore, Stacey et al. do not appear to disclose a combined use timer having the features recited in 37.

Based on this reasoning, the Applicant submits that claim 37 patentably distinguishes Stacey et al. Claims 38-41 depend from claim 37 and are submitted to patentably distinguish Stacey et al. for at least this reason.

Conclusions

The Applicant submits that the foregoing amendments place this application in condition for allowance. The Applicant respectfully requests reconsideration and allowance of this application in view of the amendments and comments presented above.

Respectfully submitted,
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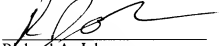
By: 

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